AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A compound of molecular formula I,

Li_XCr_yMn_{2-y}O _{4+z} I wherein 2.2.2.5 < x < 4.3.6, 0 < y < 2 and
$$z \ge 0$$
.

2. (Currently Amended) A compound according to Claim 1, wherein formula I,

$$2.2 < x < 4$$
 and $0.1 \le y \le 1.75$ z=0.5-2.6.

3. (Currently Amended) A compound according to Claim-1_2, wherein formula I,

$$2.2 < x < 3.6$$
 and $0.1 \le y \le 1.75$.

- 4. (Original) A compound according to Claim 1, further characterised by the normalised crystallographic unit cell volume, when indexed in hexagonal symmetry to a R-3m structure, being smaller than that of LiCrO₂ ie. smaller than 104.9 cubic Angstroms.
- (Original) A compound according to Claim 1, further characterised by the average cation to anion bond distance being smaller than that of LiCrO₂.
- 6. (Original) A compound according to Claim 1, wherein formula 1, x = 2.8 to 3.4, y = 0.49 to 1.46 and z = 0.5 to 2.6.
- 7. (Original) A compound according to Claim 1, wherein formula I, x = 2.8 to 3.4, y = 1.01 to 1.46 and z = 0.9 to 1.9.

- 8. (Original) A compound according to Claim 1, wherein formula I, x = 2.8 to 3.3, y = 0.49 to 0.93 and z = 0.5 to 2.6.
- 9. (Cancel) A compound according to Claim 1, wherein formula I, x = 2.04 to 3.44, y = 0.51 to 1.34 and z = 0.07 to 1.86.
- 10. (Original) A compound according to Claim 1, wherein formula I, x = 2.25 to 3.44, y = 0.98 to 1.34 and z = 0.37 to 1.86.
- 11. (Original) A compound according to Claim 1, wherein formula I, x = 3.15 to 3.30, y = 0.89 to 1.09 and z = 1.00 to 1.54.
- 12. (Original) A compound according to Claim 1, wherein formula I, x = 2.95, y = 1.09 and z = 0.11, further characterised by a normalised unit cell volume of 102.1 cubic angstroms and being indexed to a hexagonal crystallographic unit cell having dimensions a = 2.876 angstroms, and c = 14.25 angstroms.
- 13. (Original) A cathode for use in a secondary lithium ion electrochemical cell, comprising as active material a compound of formula I as defined in Claim 1.
- 14. (Original) A secondary lithium ion electrochemical cell comprising, a lithium intercalation anode, a suitable non-aqueous electrolyte including a lithium salt, a cathode as defined in Claim 13, and a separator between the anode and cathode.
- 15. (Original) An electrochemical cell according to Claim 14, wherein the anode comprises a material selected from the group consisting of transition metal oxides, transition metal sulphides

- and carbonaceous materials, and wherein the electrolyte is in liquid form and includes a suitable organic solvent.
- 16. (Original) An electrochemical cell according to Claim 15, wherein the lithium salt is selected from the group consisting of LiAsF₆, LiPF₆, LiBF₄, LiClO₄, LiBr, LiAlCl₄, LiCF₃SO₃, LiC(CF₃SO₂)₃, LiN(CF₃SO₂)₂, and mixtures thereof.
- 17. (Original) An electrochemical cell according to Claim 16, wherein the organic solvent is selected from the group consisting of propylene carbonate, ethylene carbonate, 2-methyl tetrahydrofuran, tetrahydrofuran, dimethoxyethane, diethoxyethane, dimethyl carbonate, diethyl carbonate, methyl acetate, methylformate, γ-butyrolactone, 1,3-dioxolane, sulfolane, acetonitrile, butyronitrile, trimethylphosphate, dimethylformamide and other like organic solvents and mixtures thereof.
- (Original) An electrochemical cell according to Claim 17, wherein the anode comprises a carbonaceous material.
- (Original) An electrochemical cell according to Claim 18, wherein the anode comprises a graphitic carbon.
- 20. (Original) An electrochemical cell according to Claim 18, wherein the electrolyte is a solid or gelled polymer.
- 21. (Original) An electrochemical cell according to Claim 18, wherein the electrolyte comprises 1 M LiPF₆ in a 1:1 mixture of ethylene carbonate and dimethyl carbonate.

22. (Currently Amended) An electrochemical cell according to Claim 19, wherein formula I, $x = 2.2 \pm 4.2.25 \pm 3.6$, $y = 0.1 \pm 0.1$ to 1.75 and $z \ge 0$.

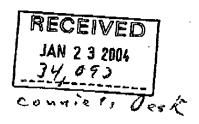


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